REMARKS

Claims 1-24 and 29-40 were under consideration at the time the office action issued. In the instant response, claims 1, 36 and 38 have been amended, claims 23 and 24 cancelled and new claim 41 (a composite of claims 1, 23 and 24) presented.

The instant invention in its simplest form is directed to a spiral staircase that articulates such that the stowed position of the steps, handrail and balusters is so greatly reduced that it folds into relatively small space. The staircase system includes at least one rail element and a plurality of stair elements. Baluster elements are coupled to the rail elements and to the stair elements. A center support comprising a plurality of telescoping elements is coupled to and supports the rail element and the stair elements. The center support system has a stowed state and a deployed state.

The election of species A (Fig. 3A) claims 23, 24, 34 and 35 is affirmed.

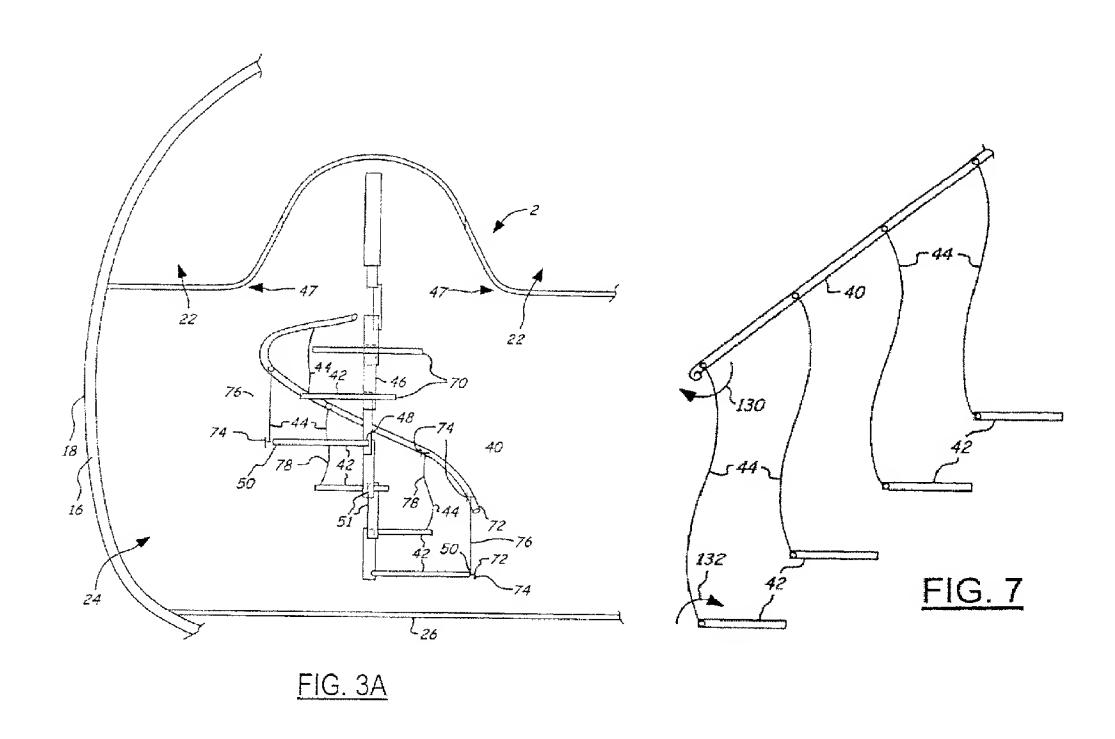
The objection to the disclosure (paragraph 29) has been avoided by the proffered amendment of this paragraph.

The rejection of claim 36 under 35 U.S.C. 112 has also been avoided by amendment of this claim.

Before discussing the rejection of the claims under 35 U.S.C. 102 and 103, the applicants note that the applicants have used the term "baluster" in describing and defining their invention. In using this term, the applicants intend that it be construed as they have used it and illustrated it and more particularly as it is defined in the standard dictionaries (see attached Webster's Ninth New Collegiate Dictionary, page 127) – "baluster – 1: an upright often vase-shaped support for a rail 2: an object or vertical

member (as the leg of a table, a round in the back of a chair, or the stem of a glass) having a vaselike or turned outline."

Attention is directed to the drawings in the case for example Figs. 3A and 7 for example from which the support nature and vase-shaped structure are confirmed. See particularly part # 44.



The applicants do not intend any other meaning. This is not an instance where the applicant is acting as his own lexicographer and relying on a special meaning for this term. There is no provision in the statutes, the rules, whatever for the Examiner to supply his own meaning or definition for the term "baluster." Yet this is exactly what the Examiner has done.

The Examiner has rejected claims 1-4, 6-8, 10-15, 17-20, 29-31, 33 and 36-37 under 35 U.S.C. 102(b) as being anticipated by Viking Selstair ("Viking"). In so doing, the Examiner states "Viking discloses a collapsible spiral staircase having all of the

applicants' claimed structure, including a. "at least one rail element..." (ring-shaped "rail elements,"), b. "...a plurality of stair elements...("stair"), c. "...a plurality of baluster elements coupled to said at least one rail element and to said plurality of stair elements..." (the vertically oriented strands of the surrounding netting are "baluster elements," d. "...a center support system..." ("center support system" refers to plurality of vertical winch wires that extend the length of the staircase...")

The ring-shaped elements cannot be said to disclose the said element 40 of the invention which as recited in claim 3 is made of a material capable of supporting a plurality of baluster elements which extend from the rail element and in turn also supporting the stair elements, and made of aluminum steel or a composite material. The wire netting and the isolated rings do not suggest the claimed rail and baluster elements. For all of the reasons outlined above, the baluster element is not disclosed or suggested by the vertically oriented strands of the surrounding netting. The Viking invention is intended for use as an offshore entry/evacuation system "for offshore locations for heights up to 45 meters above sea level... (and) can be lowered both to the sea and to the deck of a vessel..." The dimensions, weight, capacity, etc. make it totally unsuitable for installation in an aircraft. The Examiner's designation of the "staging stair element" is not entirely clear from the drawing. However, it can be appreciated that they are not formed of stair elements nor that they are coupled to a central support system. The very dimensions of the Viking staircase would not suggest any application of its components or combination thereof for use in a stowable spiral staircase that allows easy access to overhead areas of an aircraft. For example, the diameter of the Viking spiral staircase is 84 "or 7 feet, the height per section during stowage is 5.9" at least three (3) sections are

shown in the illustration or at least 17.7" approximately nine (9) times that of the invention. The claimed invention in contrast "utilizes a minimal amount of space in both a stowed and deployed arrangement" (paragraph 0005). "The rail element 40, the stair element 42, and the baluster elements 44 form a thin flat circular disk-shaped structure 82 when in the stowed state. In one embodiment of the present invention, the disk-shaped structure 82 has a cross-sectional height or thickness and of approximately less than two inches... This small thickness T allows the staircase systems... to reside within a minimal amount of space when stowed..." [paragraph 0042]. Structures having a cross-sectional height of less than 2" cannot be said to be comparable with staircase structures having a diameter of 8 ft, a stretched out height per section of 8 ft 2" and a height per section during stowage of 5.9 inches. (underlining ours). There is no way above and beyond the differences in structure that an artisan would consider the Viking Offshore Entry System's teaching as applicable to the stowable aircraft system intended for use in an aircraft.

The rejection of dependent claims 2-4, 6-8, 10-15, 17-20, 29-31, 33 and 36-37 as being anticipated by Viking similarly must fail. The ring-shaped rail elements, the baluster elements, the center support system (plurality of vertical winch wires) cannot be compared to the handrail elements 40, the elements identified as balusters, i.e., the vertically oriented strands of the surrounding) of the surrounding netting with the balusters 44 of the invention and the center support system as shown in the illustration with the center support system 46 of the invention.

The independent claim as well as the claims which depend thereon and are directed to preferred features are not shown or anticipated by Viking and this rejection under 35 U.S.C. 102 should be withdrawn.

The rejection of claims 5 and 21 under 35 U.S.C. 103(a) over Viking. The use of special materials for the rail elements is not claimed per se but as a preferred material for use in the manufacture of the rails (claim 5). As to claim 21, the cross-sectional height of 2" is also not claimed per se but the concept of such tiny dimensions is critical to evaluating applicant's invention and its intended use. The Examiner's contention that the applicant has not disclosed that the recited collapsed height provides any unexpected result. Throughout the specification, the applicant has stressed that it provides access to overhead areas of an aircraft that utilizes a minimal amount of space within an aircraft. The Viking system is contained within a storage unit from which it can easily be remotely launched from a boat and/or stand by vessel. This is totally not applicable to the applicants invention which is required to be on board stowed in a specific overhead compartment.

Claim 9 which is directed to the feature of the shape of the radial edges of the stair elements is not being claimed per se. The Examiner in his rejection of claim 9 under 35 U.S.C. 103(a) over Viking in view of Manna notes that "Viking does not expressly disclose stairs with curved radial edges" but states that Manna does and that he does so for rigidity and strength. In the invention the stair elements are designed, as is clear from figures 5 and 6, so the stair elements form "pieces of a pie", each stair element 42 forms a piece of the pie. The rail element 40 and the baluster elements 44 are arced around the pie or stair elements 42. [paragraph 0049].

More to the point is paragraph 0050 which recites "The shape of the stair elements 42" or the radial edges 120 are designed for aesthetic, ergonomic and human utilization factors." This is different than what the Examiner has concluded.

Claim 16 has been rejected under 35 U.S.C. 103(a) over Viking in view of Nicholls (5551372). Claim 16 is specific to the balusters being made of a composite material as stated by the Examiner "The baluster elements of Viking are netting components... Nicholls discloses netting made from composites. First, it is noted that the wire netting of Viking is used to "surround the stairs completely, so that there is no risk of falling out." Nicholls teaches a modular cage system for a terrestrial animal or bird fabricated from wire mesh panels. Netting is not involved, nor is a structure that has a stowed state and a deployed state. Nothing in the Nicholls patent would suggest its combination with Viking and even if this was so, the use of the composite mesh in a collapsible structure.

Claim 32 has been rejected as being obvious (35 U.S.C. 103(a)) over Viking in view of Meyerdierks (6431103). Claim 32 is directed to the feature of the deployment system. The Examiner relies on Meyerdierks as teaching a winch and a handle and considers adding this feature to Viking would be within the skill of the art. Meyerdierks is directed to a winch to be located at the point ensuring the least troublesome run of the ropes to be operated by it such as halyards or sheets., i.e., all elongated, flexing or pulling or tension elements which can be placed around a winch drum. The skilled in the art would not consider this reference or any teaching therein to regulate deployment and storage of a staircase.

Claims 22, 23, 34 and 35 have been rejected under 35 U.S.C. 103(a) as unpatentable over Viking in view of Sandwith (2002/0182026)

The Examiner admits that Viking's central support system is a winch system instead of a telescoping system but relies on Sandwith as teaching a telescoping hydraulic cylinder as an equivalent structure. This is patently not so as the artisan would not look to art directed to a double-deck trailer in which the upper deck can be tilted down to load or unload cargo. The reference suggests hydraulic cylinders or a cable and winch system for raising or lowering the upper deck. When the upper deck is lowered, a boat trailer, all terrain vehicle or any similar load may be driven or winched into place. This subject matter, its implementation has nothing to do with the subject matter of Viking (to suggest combination) and most certainly nothing to do with the invention of a collapsible spiral staircase for installation in an aircraft.

The Examiner has rejection claims 38-40 under 35 U.S.C. 103(a) as being unpatentable over Viking in view of Greiss (4022404). The latter is relied on as teaching that the Viking staircase can be located in an aircraft. Greiss which is assigned to the same assignee as applicant's invention teaches an aircraft having three decks having cart lifts between the upper deck and middle deck through which the modular food and beverage containers can be elevated and lowered. This has nothing to do with a deployable spiral staircase which when not in use can be compacted into a disc of 2" in size and which unlike the Greiss construction is not permanently installed in a space and unlike the invention can not be used to maximize storage and seating area etc.

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None of the secondary references if properly combinable would result in a teaching or suggestion o the invention. The various rejections thereon should be withdrawn.

Claim 24 has been indicated as drawn to allowable subject matter if properly presented. This has been done and this claim as well as the other claims should now be found allowable to the applicant.

SUMMARY

It is submitted that the application is in condition for allowance and notification thereof is respectfully requested.

Respectfully Submitted, Attorney for Applicant

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de leit Ne os : to commit a balk in

& {Balkan peninsula] smaller and often hos \ n. often cap billiard table near one iking opening shots 1 billiard table dividing

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akin to OE bealluc tes. ound or roundish body in a game or sport & etile; also: projectiles natomic structure; esp nb or great toe 2 % IONSENSE - often used NERVE 3a. 3b - often is thrown, kicked, or a: a pitched baseball ugh the strike zone b ~> — on the ball i introductory essay... mp on the ball) 2: of thing on the ball, the

(~ed the paper into a . considered vulgar ~ se in sexual intercourse

allare, fr. Gk ballizein: large formal gathering :: a good time MF, fr. OProv balada e. fr. LL ballare (14c) nposition in rhythmic npanying a traditional ic or sentimental song

liad, ballade] (14c) 1 tanzas with recurrent ch part 2: a musical llad

llads or sings ballads or performing of bal-

our lines with the first the second and fourth

the ball moves within rection within certain nich the rounded head and admits movement

DE *bær* bare & to QE 30) 1 : a heavy subthe draft of a ship or stability (as in charac-I in a railroad bed or provide the starting of a fluorescent lamp) rad.

as if with ballast 2

rnal turns upon loose o: one of the balls in

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ce. fr. LL] (1792); a

allo dance. [r. ballare] ies and steps are comrns) b: a theatrical ry to convey a story. 3: a group that per-

- -mane (fr. mania)] ::1->-'mā·nċ->, -ny>\ # ctural ornament conv of a circular mold 1 2 a: a set of cirb: CONTEST, COMPE-

retrieves balls for the

med) Gk ballistës, fr. scient military engine nissiles

f or relating to ballisof ballistics — bal-lis-

guided in the ascent escent

bal-listics \bo-lis-tiks \ n pl but sing or pl in constr (ca. 1753) 1 a: the science of the motion of projectiles in flight b: the flight characteristies of a projectile 2 a: the study of the processes within a firearm as it is fired b: the firing characteristics of a firearm or cartridge bal-lis-to-car-dio-gram \bo-lis-to-kard-e-o-gram\ n (1938): the record

made by a ballistocardiograph

halls that may move along solid objects or float in the air ball of fire (ca. 1900): a person of unusual energy, vitality, or drive

hall of wax (1953): AFFAIR, CONCERN (the whole ball of wax) hallon \ba-10a\ 7 [F. lit., balloon] (1830): lightness of movement that exaggerates the duration of a ballet dancer's jump

hallo-net bal->-na n [F ballonnet, dim. of ballon] (1902): a compartment of variable volume within the interior of a balloon or airship used to control ascent and descent

the Hoon \b>-"lün\ n [F ballon large football, balloon, fr. It dial. ballone large football, aug. of ballo ball, of Gmc origin] (1783) 1: a nonporous bag of tough light material filled with heated air or a gas lighter than air so as to rise and float in the atmosphere 2: a toy consisting of an inflatable rubber bag 3: the outline enclosing words spoken or

thought by a figure esp. in a cartoon balloon adj (ca. 1783) 1: relating to, resembling, or suggesting a balloon (a ~ sleeve) 2: being or having a final installment that is much

larger than preceding ones in a term or installment note

phalloon vi (1792) 1: to ascend or travel in a balloon 2: to swell or
pulf out: EXPAND 3: to increase rapidly ~vi: INFLATE INCREASE
balloon-ing \b>-\linnin\ n (1784): the act or sport of riding in a balloon
balloon-ist \-nost\ n (1784): one who ascends in a balloon billoon tire n (1923): a pneumatic tire with a flexible carcass and large

cross section designed to provide cushioning through low pressure balloon vine, n (1836): a tropical American vine (Cardiospermum halicacabum) of the soapberry family bearing large ornamental pods
that-lot bal-at n [It ballotta, fr. It dial., dint. of balla ball] (1549) 1 a
: a small ball used in secret voting b: a sheet of paper used to cast a secret vote 2 a: the action or system of secret voting b: the right to vote c: VOTE la 3: the number of votes cast

Ballot n (1549): to vote or decide by ballot - bal-lot-er n billot box n (ca. 1680) 1: a box for receiving ballots 2: BALLOT 2a billottement \bə-lät-mənt\ n [F, lit., act of tossing, fr. ballotter to toss. fr. MF baloter, fr. balotte little ball, fr. It dial. ballotta] (ca. 1839) : a sharp upward pushing with a finger against the uterine wall for diagnosing pregnancy by feeling the return impact of the displaced fetus; also: a similar procedure for detecting a floating kidney ball-park bol-park n (1899) 1: a park in which ball games are

played 2: a range (as of prices or views) within which comparison or compromise is possible — in the ballpark: approximately correct ballpark adj [fr. the expression in the ballpark] (1969): approximately

correct (a ~ estimate)
ball-point \-, point\ n (1936): a pen having as the writing point a small rotating metal ball that inks itself by contact with an inner magazine ball-room \'bol-,rüm, -,rům\ n (1736): a large room for dances
balls-up \'bol-,zop\ n, Brit (1939): FOUL-UP
ball-sy \'bol-zē\ adj ball-si-er; -est ['ball] (1960): aggressively tough

ball up vs (1885): to make a mess of: CONFUSE MUDDLE (incompetents

who balled up the whole program) ~ vi: to become badly muddled or ball valve n (1839): a valve in which a ball regulates the aperture by its

rise and fall due to fluid pressure, a spring, or its own weight bal-ly-hoo \'bal-ē-,hii\ n. pl -hoos [origin unknown] (1901) 1: a noisy attention-getting demonstration or talk 2: flamboyant. exaggerated.

pubescent esp. on the underside b: BALSAM POPLAR bal-mor-al bal-mor-al, -mar-\ n [Balmoral Castle, Scotland] (1857) 1: a laced boot or shoe 2 often cap: a round flat cap with a top pro-

jecting all around bilmy \bar ball-mē, ball-mē, NewEng also balm-ē\ adj balm-i-er; -est (15c) 1 a: having the qualities of balm: soothing b: MILD 2: CRAZY. FOOL-ISH—balm-i-ly \->-lē\ adv — balm-i-ness \-è-nas\ n
bal-ne-ol-o-gy \bal-nē-al->-jē\ n [ISV. fr. L balneum bath — more at sagno] (ca. 1879): the science of the therapeutic use of baths
balo-ney \b>-lō-nē\ var of BOLOGNA
baloney n [balogna] (ca. 1926): pretentious nonsense: BUNKUM —
often used as a generalized expression of disagreement (it is a wishs
gratifying intellectual toy. And a lot of ~—H. D. Scott)
bal-sa\ 'bol-sa\ n [Sp] (1588) 1: RAFT: specif: one made of two cylinders of metal or wood joined by a framework 2: a tropical American
tree (Ochroma lagopus) of the silk-cotton family with extremely light
strong wood used esp. for floats; also: its wood
bal-sam \bol-sam\ n [L balsamum, fr. Gk balsamon] (bef. 12c) 1 a
: an aromatic and usu, oily and resinous substance flowing from various plants; esp: any of several resinous substances containing benzoic

ous plants; esp: any of several resinous substances containing benzoic

or cinnamic acid and used esp. in medicine b: a preparation containing resinous substances and having a balsamic odor 2 a: a balsam= yielding tree; esp: BALSAM FIR b: IMPATIENS: esp: a common garden ornamental (Impatiens balsamina) 3: BALM 5 - bal-sam-le \bol-samik\ aaj

balsam fir n (1805): a resinous American evergreen tree (Abies balsamea) that is widely used for pulpwood and as a Christmas tree and is the source of Canada balsam

balsam poplar n (1786): a No. American poplar (Populus balsamifera) that is often cultivated as a shade tree and has buds thickly coated with an aromatic resin - called also balm of Gilead, tacamahac

Bal-tl \bel-te, bol-\ n (1901): a Tibeto-Burman language of northern Kashmir

Bal-tic \bol-tik\ adj [ML (mare) balticum Baltic sea] (1590) 1: of or relating to the Baltic sea or to the states of Lithuania, Latvia, and Estonia 2: of or relating to a branch of the Indo-European languages containing Latvian, Lithuanian, and Old Prussian - see INDO-EUROPEAN LANGUAGES table

Bal-ti-more oriole hool-ta-mo(a)r-, -mo(a)r-, -mar-\ n [George Calvert. Lord Baltimore] (1808): a common American oriole (Icterus galbula) in which the male is brightly colored with orange, black, and white and the female is primarily brown and greenish yellow — called also Baltimore \'bol-\

Bal-to-Slav-le \bol-()to-'slav-ik, -'slav-\ n (1896): a subfamily of Indos European languages consisting of the Baltic and the Slavic branches -SCE INDO-EUROPEAN LANGUAGES table

Ba-lu-chi \bo-'lu-chē\ n. pl Baluchi or Baluchis [Per Baluchi] (1616) 1 a: an Indo-tranian people of Baluchistan b: a member of this people 2: the Iranian language of the Baluchi people

bal·us·ter \'bal-ə-stər\ n [F balustre, fr. It balaustro, fr. balaustra wild pomegranate flower, fr. L balaustium, fr. Gk balaustion; fr. its shape] (1602) 1: an upright often vase-shaped support for a rail 2: an object or vertical member (as the leg of a table, a round in the back of a chair, or the stem of a glass) having a vaselike or turned outline

bal·us·trade \->-istrad\ n [F, fr. It balaustrata, fr. balaustro] (1644) : a row of balusters topped by a rail; also: a low parapet or barrier Bam-ba-ra \bam-bar-a\ n. pl Bambara or Bambaras (1883) 1: a member of a Negroid people of the upper Niger 2: a Mande language of

the Bambara people bam-bi-no \bam-be-(a)no, bam-\ n. pl -nos or -ni \-(a)ne\ [le, dim. of bambo child] (1722) I pl usu bambini: a representation of the infant Christ 2: CHILD, BABY

bam-boo \(')bam-bu\ n. pl bamboos [Malay bambu] (1586): any of various chiefly tropical woody or arborescent grasses (as of the general Bambusa, Arundinaria, and Dendrocalamus) including some with hollow stems used for building, furniture, or utensils and young shoots used for food — bamboo adj

bamboo curtain n. often cap B&C (1949): a political, military, and ideological barrier in the Orient

bam-boo-zle \bam-bu-zəl\ vt -boo-zled; -boo-zling \-'buz-(>-)lin\ [origin unknown] (1703): to deceive by underhand methods: DUPE, HOOD. wink — bam-boo-zle-ment \-'bü-zəl-mənt\ n

'ban \'ban\ vb banned; ban ning [ME bannen to summon, curse, fr. OE bannan to summon; akin to OHG bannan to command. L fari to speak, Gk phanai to say, phone sound, voice] vt (12c) 1 archaic : CURSE 2: to prohibit esp. by legal means (~ discrimination); also : to prohibit the use, performance, or distribution of $\langle \sim a \text{ book} \rangle \langle \sim a \rangle$ pesticide) ~ vi: to utter curses or maledictions

ban n [ME, partly fr. bannen & partly fr. OF ban, of Gmc origin; akin to OHG bannan to command] (14c) 1: the summoning in feudal times of the king's vassals for military service 2: ANATHEMA. EXCOM. MUNICATION 3: MALEDICTION, CURSE 4: legal or formal prohibition 5: censure or condemnation esp. through social pressure

wan \ ban \ n. pr baint \ ban (Je\ [Rom] (1880) — see leu at MONEY table Ban ach space \'ban-ək-. -ək-\ n [Stefan Banach † 1945 Pol. mathematician] (1949): a normed vector space for which the field of multipliers comprises the real or complex numbers and in which every Cauchy sequence converges to a point in the space

ba-nal \ba-nal, ba-, -'nal; bā-'nal; 'bān-'l\ adj [F, fr. MF, of compulsory feudal service, possessed in common, commonplace, fr. ban] (1840): lacking originality, freshness, or novelty: TRITE syn see insign — banal-ity \bə-'nal-it-e also bā- ar ba-\n — banal-ize \bə-'nal-iz, ba-, -'nāl-; bā-'nal-; 'bān-'l-\v m — banal-le, ba-, -'nāl-; bā-nal-; 'bān-'l-\le, adv

ba-nana \bə-nan-ə, esp Brit - nän-\ n, often attrib [Sp or Pg; Sp, fr. Pg, of African origin; akin to Wolof banana banana] (1597) 1: an elongated usu. tapering tropical fruit with soft pulpy slesh enclosed in a soft usu. yellow rind 2: a widely cultivated perennial herb (genus Musa of the family Musaceae, the banana family) bearing bananas in compact pendent bunches

banana oil n (1926) 1: a colorless liquid acetate C1H14O2 of amyl alcohol that has a pleasant fruity odor and is used as a solvent and in the manufacture of artificial fruit essences 2: a facquer containing ba-

banana republic n (1935): a small dependent country: esp: one run despotically ba-nan-as \ba-'nan-az. esp Brit -'nan-\ adj (1968): CRAZY (go ~) (drives

banana seat n (1965): an clongated bicycle saddle banana split n (1920): ice cream served on a banana sliced in half

lengthwise and usu. garnished with flavored syrups, fruits, nuts, and whipped cream ba-nau-sic \b>-'nò-sik, -zik\ adj [Gk banausikos of an artisan, nonintellectual, vulgar, fr. banausos artisan] (1845): relating to or concerned

\>\ abut \^\ kitten. F table \>r\ further \a\ ash \a\ ace \a\cot, cart \au\ out \ch\ chin \c\ bet \e\cent{e}\ easy \g\ go \i\ hlt \l\ lee \j\ Job \n\ sing \o\ 80 \o\ law \oi\ boy \th\ thin \th\ the \\\\\ \u\\ foot \y\ yet \zh\ vision \a, \&, *, \oe, \overline{ce}, \ue, \ta, \see Guide to Pronunciation